

New Mexico Drought Status: August 2007

National Weather Service: Albuquerque, NM

...Summer Thunderstorms Ease Drought in far Western New Mexico...

Discussion: Precipitation during July ranged from well above normal in the Sangre de Cristo Mountain region and in the south central mountains, to well below normal from the high plains of Torrance County through the east central plains to the Texas border. Precipitation in the far west was near normal to well above normal, except in the Four Corners where dry conditions prevailed for the second consecutive month.

The summer thunderstorm season for central and southwest New Mexico began in early July (on schedule). July concluded with more than a week of atypical northeast-to-southwest steering flow aloft that allowed developing showers and storms to move from the mountains into normally drier valley regions to the west of the mountains. This reversal of steering flow from prevailing west-to-east currents throughout most of the year, and injection of low level moisture, lead to New Mexico's version of the North American Monsoon for west central and southwest parts of the state. The atypical steering flow generally resulted in well above normal rainfall west of the Continental Divide from McKinley County south to Hidalgo County, while most of Sierra County received less than 75 percent of normal rainfall.

The 7 high elevation NRCS SNOTEL precipitation reporting sites in the Sangre de Cristo Mountains received an average of 134 percent of normal July precipitation, while the 3 SNOTEL sites in the Jemez Mountains received an average of 130 percent of normal. However, the Quemazon SNOTEL (5WNW of Los Alamos) recorded only 52 percent of normal July precipitation, which was consistent with the Los Alamos National Lab which reported only 61 percent of normal July rainfall. The area around Los Alamos has been in an "Alert" (mild) drought status, although the extent of mild drought continues to diminish as more abundant precipitation has occurred from Santa Fe to the nearby Sangre de Cristo Mountains.

Recent rainfall reports and personal communication with Zuni Pueblo hydrologist Kirk Bemis confirm that the warning level drought depicted on previous New Mexico Drought Status maps has eased considerably.

Precipitation during the first week of August has favored the southwest and west central mountains from Grant County northward to McKinley County. A sample of precipitation measurements from CoCoRaHS, RAWS, and airport locations in western New Mexico from August 1 through August 7 include:

Gallup Airport	1.62 inches	Slaughter Mesa RAWS (20S Quemado)	2.72 inches
Aztec 9NE	1.21 inches	Bear Wallow RAWS (16NE Glenwood)	3.34 inches
Milan 2N	1.79 inches	Datil RAWS (11NNE Datil)	2.46 inches
Farmington Airport	0.67 inches	Brushy Mtn RAWS (20SW Acoma Pueblo)	2.47 inches
Cuba RAWS	1.23 inches	Zuni Buttes RAWS (7NW Zuni)	2.14 inches
Silver City 2NW	2.41 inches	Albino Canyon RAWS (12N Navajo Dam)	2.46 inches
Deming 1SE	0.84 inches	Lordsburg INNW	1.49 inches

The August New Mexico Drought Status map no longer shows any part of west central New Mexico in moderate drought, while the far southwest part of the state has been removed from any level of drought depiction.

Statewide, both water year 2007 and calendar year 2007 precipitation through July were about 20 percent above average, mainly due to much wetter than normal conditions in December 2006 and from April through May 2007.

The Northern Mountains and Southwestern Mountains climate divisions 2007 calendar year precipitation through July was 8 to 9 percent above average, while the Central Valley and Southeastern Plains climate divisions 2007 precipitation was about 45 percent above average. However individual reporting stations within a climate division continue to show significant variability.

In the Southwestern Mountains climate division, conditions ranged from 67 percent of normal precipitation through July at Quemado to 135 percent of normal at Fort Bayard. In the Northwest Plateau climate division, precipitation through July ranged from 87 percent of normal at Gallup Airport to 162 percent of normal at Lindriith 2SE. For more individual site precipitation data through July, see Table 3 below.

One way to assess short and long term drought on a climate division level is to look at precipitation percentiles. Percentiles greater than 50 indicate that the area has been wetter than average. Percentiles less than 11 are usually associated with an “Emergency” drought designation in New Mexico. Percentiles from 11 to 20 are consistent with a “Warning” drought designation. The 21 to 30 percentiles are associated with an “Alert” designation, while the 31 to 40 percentile range is defined as an “Advisory” drought.

As of July 1, the lowest short term percentiles were from March through June 2007 for climate divisions 1, 2, 4 and 8 while the lowest short term percentiles for climate divisions 3, 5, 6, and 7 were from April through June. Table 1 shows these short term WRCC precipitation percentiles for each of the eight climate divisions in New Mexico (Figure 1) and for the July 2001 through June 2007 (72 month) period.

Climate Division	Lowest 3 - 6 month Precipitation Percentile (and Departure from Normal) ending June 30, 2007	72 month Precipitation Percentile (and Departure from normal) ending June 30, 2007
Northwest Plateau (1)	63 rd percentile (+0.22 inches)	50 th percentile (-0.32 inches)
Northern Mountains (2)	49 th percentile (-0.22 inches)	19 th percentile (-7.43 inches)
Northeast Highlands (3)	54 th percentile (-0.09 inches)	60 th percentile (+2.11 inches)
Southwest Mountains (4)	56 th percentile (+0.00 inches)	59 th percentile (+1.70 inches)
Central Valleys (5)	73 rd percentile (+0.43 inches)	80 th percentile (+6.66 inches)
Central Highlands (6)	74 th percentile (+0.73 inches)	46 th percentile (-1.48 inches)
Southeast Plains (7)	88 th percentile (+2.17 inches)	76 th percentile (+6.96 inches)
Southern Desert (8)	84 th percentile (+0.84 inches)	64 th percentile (+2.63 inches)

Table 1

As of August 1, the lowest short term percentiles were from May through July 2007 for climate divisions 4, 5, and 7 while lowest short term percentiles for climate divisions 1, 2, and 6 were from March through July. The lowest short term percentiles for division 3 were from April through July while lowest short term percentiles for division 8 were from February through July. Lowest long term percentiles are for the 72 month period ending July 2007 for all divisions except for division 3 where the lowest long term percentiles are for the 18 month period ending July 2007, and for division 7 where the lowest long term percentiles are for the 30 month period ending July 2007.

Climate Division	Lowest 3 - 6 month Precipitation Percentile (and Departure from Normal) ending July 31, 2007	Lowest 18 - 72 month Precipitation Percentile (and Departure from normal) ending July 31, 2007
Northwest Plateau (1)	75 th percentile (+0.86 inches)	54 th percentile (+0.53 inches)
Northern Mountains (2)	72 nd percentile (+1.00 inches)	26 th percentile (-5.60 inches)
Northeast Highlands (3)	38 th percentile (-1.00 inches)	59 th percentile (+0.84 inches)
Southwest Mountains (4)	42 nd percentile (-0.36 inches)	57 th percentile (+1.24 inches)
Central Valleys (5)	82 nd percentile (+0.95 inches)	84 th percentile (+8.12 inches)
Central Highlands (6)	54 th percentile (-0.01 inches)	46 th percentile (-1.40 inches)
Southeast Plains (7)	79 th percentile (+1.58 inches)	77 th percentile (+4.71 inches)
Southern Desert (8)	77 th percentile (+0.99 inches)	68 th percentile (+3.77 inches)

Table 2

Climate divisions 3, 4, and 6 have shown significant decreases in their precipitation percentiles since the end of May. The precipitation percentile for division 3 dropped from 77th to 38th, while division 4 dropped from 67th to 42nd, and division 6 fell from 84th to 54th. Parts of these divisions are being watched for possible inclusion as advisory level drought areas next month, depending on rainfall patterns that emerge from mid August through early September.



(Figure 1) Climate Divisions in New Mexico

From Table 2, climate division 2 continues to show the most significant long term drought with an average precipitation percentile of 26 (7 percent improved from last month) and an average precipitation deficit of about 5.6 inches (improved from 7.4 inches at the end of June)..

Long-range outlook: The latest ENSO (El Nino Southern Oscillation) discussion favors a transition from current ENSO neutral conditions in the tropical Pacific Ocean to La Nina conditions during fall or winter. La Nina would favor drier than normal conditions in the Northern Mountains (climate division 2) this fall with near normal precipitation elsewhere across New Mexico. A persistent La Nina would likely result in drier than normal conditions statewide from this winter into the spring of 2008.

Calendar Year 2007 and Water Year 2007 Precipitation for New Mexico
National Weather Service Albuquerque, NM

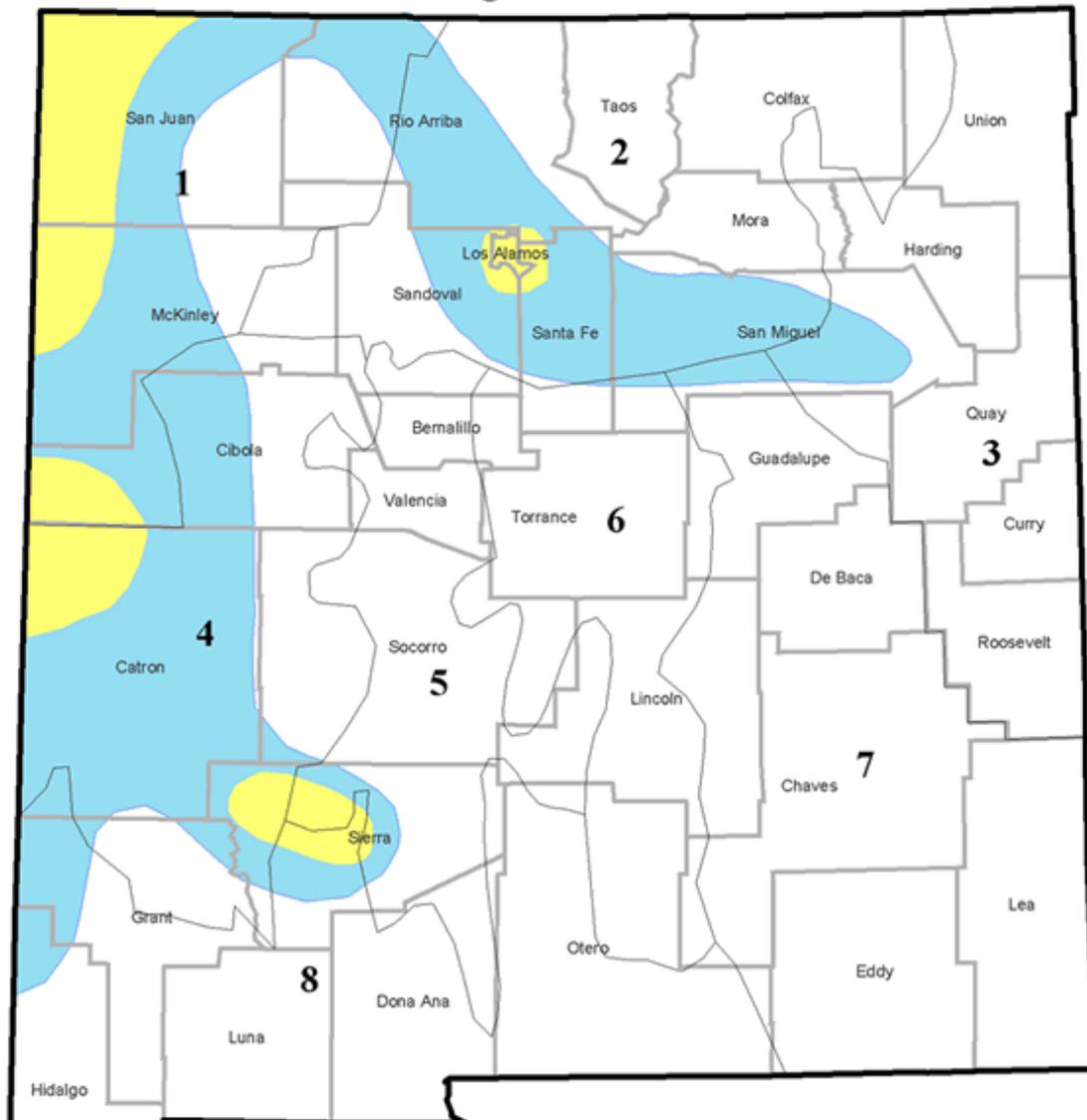
<u>Location</u>	<u>2007 (January - July)</u>			<u>Water Year 2007 (Oct '06 - July '07)</u>			
	<u>Obs</u>	<u>Normal</u>	<u>%Normal</u>	<u>Obs</u>	<u>Normal</u>	<u>% Normal</u>	<u>SID</u>
<i>Northwest Plateau</i>							
AZTEC RUINS N/M	5.91	5.02	118%	8.76	7.63	115%	AZT
FENCE LAKE	7.03	7.00	100%	9.51	10.25	93%	FCK
FARMINGTON AG CTR	5.56	4.23	131%	8.25	6.45	128%	FAR
GALLUP FAA APRT	5.02	5.78	87%	7.99	8.56	93%	GUP
LINDRITH 2SE	12.24	7.57	162%	16.45	10.78	153%	LDR
NAVAJO DAM	6.03	6.89	88%	9.87	10.49	94%	BLN
<i>Northern Mountains</i>							
ALCALDE	6.34	4.77	133%	8.89	6.87	129%	ALC
CANJILON R/S	9.34	8.27	113%	12.87	11.44	113%	CJL
CERRO	5.72	6.80	84%	9.35	9.28	101%	CRR
CHAMA	13.07	11.44	114%	19.50	16.28	120%	CHM
CIMARRON 4SW	8.03	9.50	85%	12.85	11.66	110%	CPS
GHOST RANCH	7.90	6.03	131%	10.58	8.20	129%	AIQ
JEMEZ SPRINGS	9.78	9.04	108%	13.03	12.50	104%	JEM

JOHNSON RANCH	6.18	5.55	111%		8.82	7.95	111%	CUB
LAS VEGAS FAA APRT	9.80	9.00	109%		12.31	11.32	109%	LVS
LOS ALAMOS	8.36	9.57	87%		12.18	12.81	95%	LOA
RATON FILTER PLT	8.45	10.40	81%		13.46	12.79	105%	RRT
RED RIVER	17.34	11.94	145%		22.63	15.77	144%	RED
SANTA FE 2	7.72	7.29	106%		11.62	10.03	116%	STF
WOLF CANYON	15.02	12.47	120%		22.37	17.44	128%	CUA
<i>Northeastern Plains</i>								
CLAYTON APRT	9.52	9.46	101%		12.79	11.42	112%	CAO
CLOVIS	13.21	9.89	134%		16.57	12.79	130%	CLV
CONCHAS DAM	5.12	7.97	64%		7.28	10.01	73%	CNC
MOSQUERO 1NE	10.75	9.43	114%		12.81	11.58	111%	MSQ
PORTALES	14.13	9.35	151%		17.95	11.89	151%	POR
TUCUMCARI 4NE	9.21	9.24	100%		11.94	11.72	102%	TUC
<i>Southwestern Mountains</i>								
FORT BAYARD	9.77	7.26	135%		13.28	10.35	128%	FTB
WINSTON (CHLORIDE)	6.32	5.40	117%		9.92	7.60	131%	WNS
GRANTS APRT	4.82	4.82	100%		8.50	7.18	118%	GNT
QUEMADO	3.55	5.26	67%		5.52	7.12	78%	QMD
RESERVE R/S	7.64	6.90	111%		10.40	11.02	94%	RES
<i>Central Valley</i>								
ABQ WSFO APRT	6.87	4.44	155%		10.09	6.27	161%	ABQ
BOSQUE DEL APACHE	7.38	3.71	199%		10.77	5.61	192%	SAA
LOS LUNAS 3SSW	4.26	3.95	108%		6.88	6.02	114%	LLU
SOCORRO	5.43	4.47	121%		9.34	6.48	144%	SCR
<i>Central Highlands</i>								
CAPITAN	12.74	8.60	148%		16.41	10.83	152%	CAP
CLOUDCROFT	19.87	13.18	151%		26.11	17.43	150%	CLD
ESTANCIA 4N	6.83	6.34	108%		10.53	8.76	120%	EST
MOUNTAINAIR R/S	4.83	7.30	66%		8.58	10.05	85%	MTN
RUIDOSO 2NNE	16.09	11.12	145%		21.52	15.14	142%	RUP
<i>Southeastern Plains</i>								
ARTESIA 6S	9.31	6.08	153%		10.90	8.18	133%	ART
CARLSBAD	11.09	6.30	176%		12.39	8.65	143%	CWP
FORT SUMNER	8.27	7.53	110%		10.25	10.08	102%	FSM
ROSWELL CLIMAT	11.39	6.74	169%		13.88	9.03	154%	ROW
SANTA ROSA	7.08	7.63	93%		10.28	9.91	104%	SNR
TATUM	15.50	8.59	180%		18.69	11.13	168%	TAT
<i>Southern Desert</i>								
ANIMAS	5.86	4.69	125%		8.28	7.15	116%	ANM
DEMING	3.89	4.14	94%		5.86	6.06	97%	DEM
FAYWOOD	6.95	5.08	137%		9.92	7.83	127%	FAY
STATE U LAS CRUCES	7.00	3.71	189%		9.69	5.80	167%	STC
TRUTH OR CONSEQ	4.04	4.77	85%		6.67	8.09	82%	TRC
TULAROSA	7.34	4.61	159%		11.77	6.68	176%	TLR

Table 3

<u>Climate Division</u>	2007 (January - July) <u>% Nrml</u>	Water Year 2007 <u>% Nrml</u>
Northwest Plateau	115%	112%
Northern Mountains	109%	116%
Northeastern Plains	112%	114%
Southwestern Mountains	108%	110%
Central Valley	144%	152%
Central Highlands	130%	134%
Southeastern Plains	146%	134%
Southern Desert	130%	125%
All Divisions	120%	121%

Meteorological Drought Status Map August 2007



Source: NM State Drought Monitoring Committee

Drought Status	
	No Drought
	Advisory
	Alert - Mild
	Warning - Moderate
	Emergency - Severe

Climate Divisions	
1	Northwestern Plateau
2	Northern Mountains
3	Northeastern Plains
4	Southwest Mountains
5	Central Valley
6	Central Highlands
7	Southeastern Plains
8	Southern Desert